

DESCRIPTION OF LAST NYMPHAL INSTAR OF *XESTOCEPHALUS ANCORIFER* (HOMOPTERA: CICADELLIDAE)¹

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ABSTRACT: The last instar nymph of *Xestocephalus ancorifer* Linnavuori is described and the pharate adult is illustrated.

No nymphal stage of any member of the leafhopper genus *Xestocephalus* Van Duzee has ever been described. Through the kindness of Dr. James P. Kramer, U.S. National Museum, I have been able to examine 2 male specimens of *Xestocephalus*, one of which is a teneral adult still attached to the exuviae and a pharate adult which shares the same size and characteristics as the exuviae. The adult is identified as *X. ancorifer* Linnavuori, 1959.

X. ancorifer ranges from Panama south to Paraguay (Linnavuori, 1959). The biology of the genus is poorly known. Oman (1949) suspects that the nymphs of *Xestocephalus* live in ground litter or other subterranean habitats. In addition, Oman (1949) speculates that the nymphs may also be myrmecophilous because the closely related genus *Myrmecophryne* Kirkaldy has been collected in ants' nests. This is supported by Hamilton (1975) who sifted a species of *Xestocephalus* from topsoil which also contained ants.

This paper describes and illustrates the last instar nymph of *X. ancorifer*. It is hoped that the description and illustration will aid in future identifications of immature *Xestocephalus* species. The collection data for the specimens used in this study are: Brazil, Bahia, Itabuna, July 1971, T.A. Winder, in cacao leaf litter. The specimens are deposited in the U.S. National Museum.

Description of Last Instar Nymph

Length: 3.2 mm., width of pronotum - 0.9 mm.

Form: Elongate, stout dorsoventrally, widest at wingpads. Head rounded anteriorly in lateral view, antennal pits not well developed, beak 3-segmented, extending to mesosternum, crown and clypeus roughened by tuberculi bearing small setae, surface of clypellus, lora and gena smooth. Pronotum asperate, trapezoidal in dorsal view, episternum triangular, coxa of prothoracic leg about 2/3 that of femur, tibia with single row of spines on dorsal margin, tarsomeres of prothoracic legs 2-segmented. Dorsum of mesonotum asperate, mesonotal wingpad almost as long as metanotal wingpad, episternum not divided as in the adult, coxa 2 smaller than coxa 1, rest of mesothoracic leg like prothoracic leg. Dorsum of metanotum asperate, wingpad extending to anterior margin of third abdominal tergite, metathoracic femur laterally flattened, tibia with 2 rows of spines on dorsal and ventral sides, apex of tibia ringed

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with setae, tarsomeres 3-segmented. Abdomen 8-segmented, ninth segment forms the genital capsule, posterior margin of abdominal tergites with row of setae, small setae occasionally scattered on surface of tergites.

Coloration: Dorsum rust brown, ventral surface of abdomen and thorax pale yellow, legs in dorsal view light brown.



Fig. 1. Habitus of the pharate adult of *Xestocephalus ancorifer* showing last nymphal instar characteristics.

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BOOK REVIEW

NEW ZEALAND BUTTERFLIES Identification and Natural History. George W. Gibbs. 1980. Collins, Auckland. 207 p., 197 pls., 63 text figs. Price \$45.

This sumptuously illustrated and beautifully printed book recently made its way to the American market. It is an excellent example of the kind of book those of us interested in butterfly faunistics would like to publish; an exhaustive treatment of all species known from the area under consideration, with sharp colored plates depicting immature stages, living adults, habitats, and spread museum specimens as well. In addition, there are excellent scanning electron photomicrographs of eggs, larval setae, adult scale types, and other ultrastructure. Photos of parasitoids, additional drawings to aid identification of adults, and distribution maps add further to the visual enrichment of this book.

Of the 23 species recorded from New Zealand, 11 are known only from that island country; the rest are common to Australia and New Zealand. Some of the latter group - such as *Danaus plexippus*, *Pieris rapae*, and *Lampides boeticus* - are widespread in the world. After an introduction in which he discusses New Zealand's paucity of butterfly species and a general history of New Zealand lepidopterology, Gibbs discusses migration and introduction of species "over the Tasman" Sea from Australia. The body of the book is devoted to meticulous treatment of identification, life histories, ecology, and habits of the 23 species, with diagnostic introductions for each family, subfamily, and genus. The fauna consists of 2 Pieridae, 3 Danaidae, 7 Satyridae (these last 2 families treated as subfamilies of the Nymphalidae), 5 Nymphalidae (*sensu strictu*), and 6 Lycaenidae (4 coppers and 2 blues). No Papilionidae or Hesperidae have been recorded there as yet.

The book is rounded out with a chapter discussing how and where to look for butterflies in New Zealand, and a glossary and extensive bibliography. The quality of writing and illustration is high (though I noticed the irritating use of "larvae" in the singular), and printing and binding are more than satisfactory. Gibbs has given us a well-researched and virtually complete coverage of New Zealand butterflies from all aspects. It could be a model for similar works in other regions where the butterfly fauna is not so overwhelming in quantity as to preclude such a work from a standpoint of labor and expense.

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